



Sno-Thro

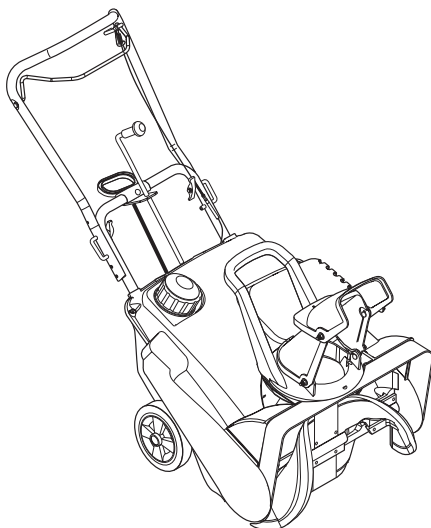
Owner/Operator Manual

Models

938017 - 522

938018 - 722

938019 - 522



U.S. Patents
5758436 and 5966846



(GB) ENGLISH

(F) FRANÇAIS

(E) ESPAÑOL

Transfer
model &
serial number
label from
product
registration
here.

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modèle et du numéro de
série dans cet encadré.

Transferir aquí la etiqueta
del modelo y número de
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Supercedes 03812400,A,B
Printed in USA

CONTROLS AND FEATURES

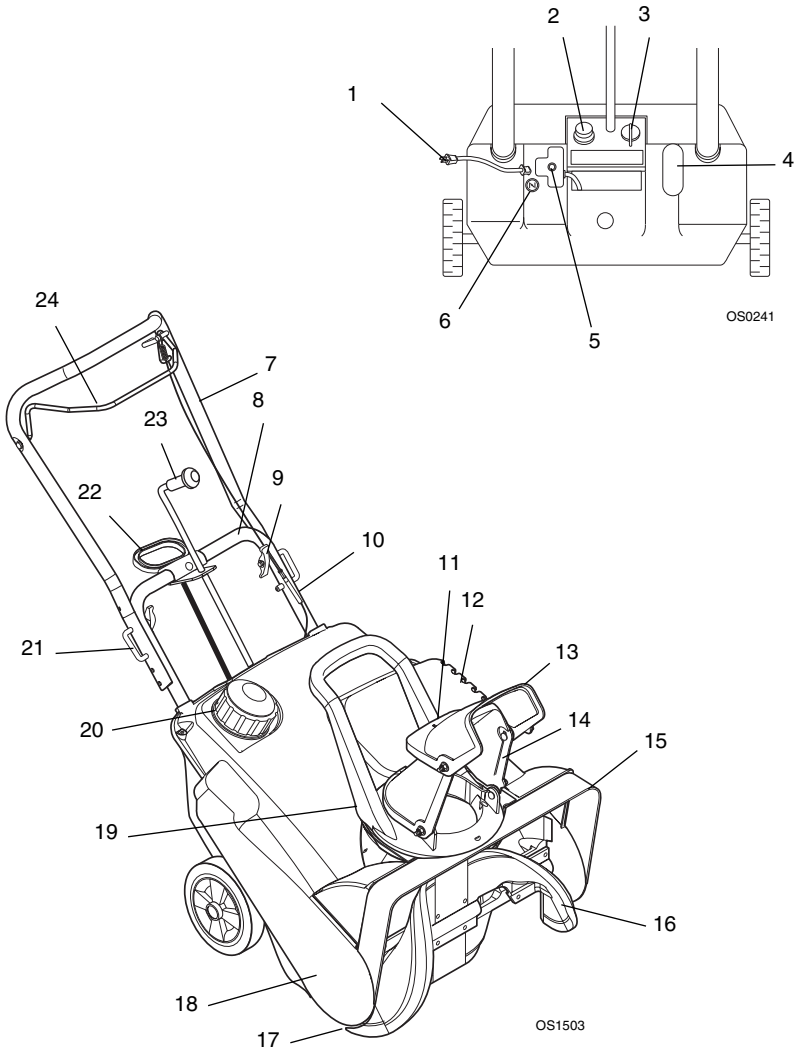


Figure 1



WARNING



The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

ENGLISH

1. Power Cord (optional)
2. Primer Bulb
3. Ignition Switch
4. Fuel Level Indicator
5. Starter Button (optional)
6. Choke Control Knob
7. Upper Handlebar
8. Lower Handlebar
9. Handlebar Knob
10. Auger Control Cable
11. Chute Deflector Handle
12. Exhaust
13. Discharge Chute Deflector
14. Discharge Chute
15. Auger Housing
16. Auger
17. Scraper Blade
18. Cowl
19. Discharge Chute Rotation Handle
20. Fuel Tank and Cap
21. J - Bolt
22. Recoil Starter Handle
23. Discharge Chute Crank (938017, 018)
24. Auger Clutch Bail

FRANÇAIS

1. Cordon d'alimentation (en option)
2. Poire d'amorçage
3. Commande d'allumage
4. Indicateur de niveau de carburant
5. Bouton du démarreur (en option)
6. Bouton du starter
7. Guidon supérieur
8. Guidon inférieur
9. Bouton du guidon
10. Câble de commande du rotor
11. Poignée du déflecteur de la goulotte
12. Échappement
13. Déflecteur de la goulotte de décharge
14. Goulotte d'évacuation
15. Carter de la turbine
16. Rotor
17. Lame racleuse
18. Garant
19. Poignée de rotation de la goulotte d'évacuation
20. Réservoir de carburant et bouchon
21. Vis en J
22. Poignée du démarreur à cordon
23. Manivelle de la goulotte d'évacuation (938017, 018)
24. Commande d'embrayage de la turbine

ESPAÑOL

1. Cable de alimentación (opcional)
2. Botón del cebador
3. Interruptor de encendido
4. Indicador del nivel de combustible
5. Botón del motor de arranque (opcional)
6. Perilla de control del estrangulador
7. Manillar superior
8. Manillar inferior
9. Perilla del manillar
10. Cable de control del sinfín
11. Asa del deflector de la tolva
12. Escape
13. Deflector de la tolva de descarga
14. Tolva de descarga
15. Alojamiento del sinfín
16. Sinfín
17. Cuchilla raspadora
18. Cubierta
19. Asa de rotación de la tolva de descarga
20. Depósito del combustible y tapón
21. Perno en J
22. Manilla de retroceso del arranque
23. Manivela de la tolva de descarga (938017, 018)
24. Asa del embrague del sinfín

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INTRODUCTION

THE MANUAL

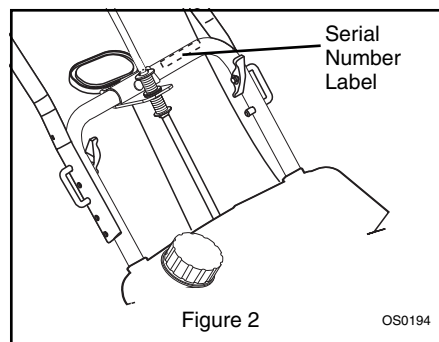
Before operation of unit, carefully and completely read your manuals. The contents will provide you with an understanding of safety instructions and controls during normal operation and maintenance.

All reference to left, right, front, or rear are given from operator standing in operation position and facing the direction of forward travel.

MODEL AND SERIAL NUMBERS

When ordering replacement parts or making service inquiries, know the Model and Serial numbers of your unit and engine.

Numbers are located on the product registration form in the unit literature package. They are printed on a serial number label, located on the frame of your unit.



- Record Unit Model and Serial numbers here.

- Record Engine Model and Serial numbers here.

PRODUCT REGISTRATION

A warranty registration card must be filled out, signed, and returned at time of purchase. This card activates the warranty. Claims meeting requirements during limited warranty period will be honored.

UNAUTHORIZED REPLACEMENT PARTS

Use only Ariens replacement parts. The replacement of any part on this vehicle with anything other than an Ariens authorized replacement part may adversely affect the performance, durability, or safety of this unit and may void the warranty. Ariens disclaims liability for any claims or damages, whether warranty, property damage, personal injury or death arising out of the use of unauthorized replacement parts.

DISCLAIMER

Ariens reserves the right to discontinue, make changes to, and add improvements upon its products at any time without public notice or obligation. The descriptions and specifications contained in this manual were in effect at printing. Equipment described within this manual may be optional. Some illustrations may not be applicable to your unit.

DELIVERY

Customer Note: If you have purchased this product without complete assembly and instruction by your retailer, it is your responsibility to:

- Read and understand all assembly instructions in this manual.



WARNING: Improper assembly or adjustments can cause serious injury.

If you do not understand or have difficulty following the instructions, contact your nearest Ariens Dealer for assistance. To locate your nearest Ariens Dealer, call 1-800-678-5443 or visit our web site at <http://www.ariens.com>.

- Do not operate the Sno-Thro unless all controls function as described in this manual.

Before attempting to operate your Sno-Thro:

1. Make sure all assembly has been properly completed.
2. Understand all Safety Precautions provided in the manuals.
3. Review control functions and operation of the unit.
4. Review recommended lubrication, maintenance and adjustments.
5. Review Limited Warranty Policy.
6. Fill out Original Purchaser Registration Card and return the card to Ariens Company.

SAFETY

SAFETY ALERTS



Look for these symbols to point out important safety precautions. They mean:

Attention! Personal Safety Is Involved!

Become Alert! Obey The Message!



The safety alert symbols above and signal words below are used on decals and in this manual.

Read and understand all safety messages.



DANGER: IMMINENTLY HAZARDOUS SITUATION! If not avoided, WILL RESULT in death or serious injury.



WARNING: POTENTIALLY HAZARDOUS SITUATION! If not avoided, COULD RESULT in death or serious injury.



CAUTION: POTENTIALLY HAZARDOUS SITUATION! If not avoided, MAY RESULT in minor or moderate injury. It may also be used to alert against unsafe practices.

NOTATIONS

NOTE: General reference information for proper operation and maintenance practices.

IMPORTANT: Specific procedures or information required to prevent damage to unit or attachment.

PRACTICES AND LAWS

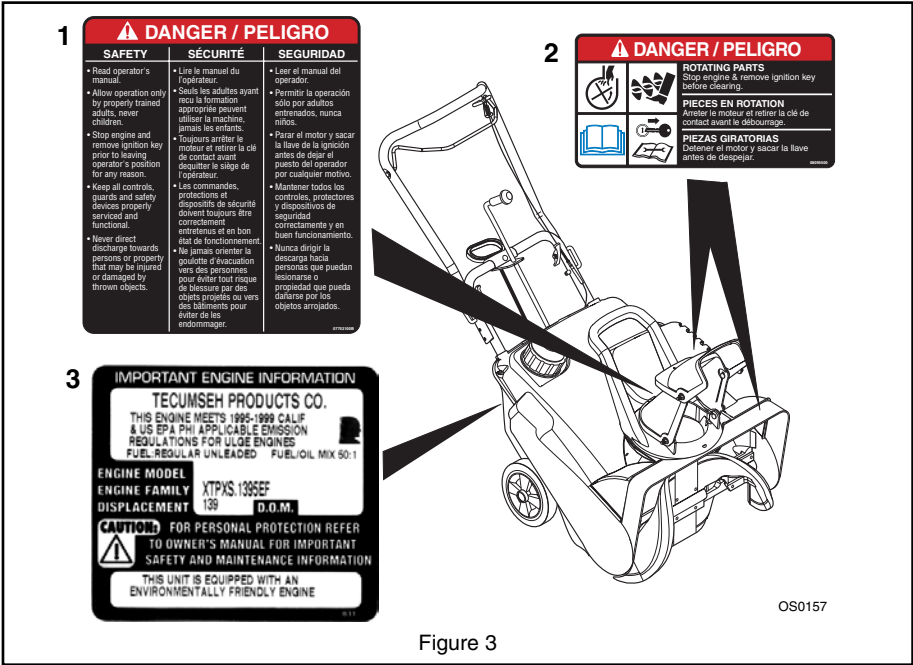
Practice usual and customary safe working precautions, for the benefit of yourself and others. Understand and follow all safety messages. Be alert to unsafe conditions and the possibility of minor, moderate, or serious injury or death. Learn applicable rules and laws in your area.

REQUIRED OPERATOR TRAINING

Original purchaser of this unit was instructed by the seller on safe and proper operation. If unit is to be used by someone other than original purchaser; loaned, rented or sold, ALWAYS provide this manual and any needed safety training before operation.

SAFETY DECALS AND LOCATIONS

ALWAYS replace missing or damaged Safety Decals. Refer to Figure 3 below for Safety Decal locations.



1. DANGER! SAFETY

- Read operator's manual.
- Allow operation only by properly trained adult, never children.
- Stop engine and remove ignition key prior to leaving operator's position for any reason.
- Keep all controls, guards and safety devices properly serviced and functional.
- Never direct discharge towards persons or property that may be injured or damaged by thrown objects.

2. DANGER! ROTATING PARTS!



OL1801

Read operator's manual.



OL0900

Stop engine and remove ignition key before clearing.



OS1050

Stop engine and remove ignition key before clearing.



OL4010

Stop engine, remove key, read manual before making any repairs, adjustments.

3. IMPORTANT ENGINE INFORMATION

CAUTION: For personal protection refer to owner's manual for important safety and maintenance information.

ASSEMBLY SAFETY RULES

Read, understand, and follow all safety practices in Owner/Operator Manual before beginning assembly. Failure to follow instructions could result in personal injury and/or damage to unit.

ALWAYS remove key and/or wire from spark plug before assembly. Unintentional engine start up can cause death or serious injury.

OPERATIONAL SAFETY RULES

Walk Around Inspection

Complete a walk around inspection of unit and work area to understand:

- Work area
- Your unit
- All safety decals

Work Area

ALWAYS check overhead and side clearances carefully before operation. ALWAYS be aware of traffic when operating along streets or curbs.

Keep children and people away. Keep children out of work area and under watchful care of a responsible adult.

NEVER allow children to operate or play on or near unit. Be alert and shut off unit if children enter area.

DO NOT allow adults to operate unit without proper training.

Keep area of operation clear of all toys, pets, and debris. Thrown objects can cause injury.

Check for weak spots on docks, ramps or floors. Avoid uneven work areas and rough terrain. Stay alert for hidden hazards.

Avoid uneven and rough terrain. DO NOT operate near drop offs, ditches, or embankments. Unit can suddenly turn over if a wheel is over the edge of a cliff or ditch, or if an edge caves in.

Falling snow, fog, etc. can reduce vision and cause an accident. Operate unit only when there is good visibility and light.

Personal Safety

Only trained adults may operate unit.

Training includes actual operation.

NEVER operate unit after or during the use of medication, drugs or alcohol. Safe operation requires your complete and unimpaired attention at all times.

NEVER allow anyone to operate this unit when their alertness or coordination is impaired.

DO NOT operate unit without wearing adequate winter outer garments. Wear adequate safety gear, including safety glasses with side shields, and protective gloves. Wear proper footwear to improve footing on slippery surfaces.

DO NOT wear loose clothing or jewelry and tie back hair that may get caught in rotating parts. Protect eyes, face and head from objects that may be thrown from unit. Wear appropriate hearing protection.

Avoid sharp edges. Sharp edges can cut. Moving parts can cut off fingers or a hand.

ALWAYS keep hands and feet away from all rotating parts during operation. Rotating parts can cut off body parts.

ALWAYS keep hands away from all pinch points.

DO NOT touch unit parts which might be hot from operation. Allow parts to cool before attempting to maintain, adjust or service.

NEVER place your hands or any part of your body or clothing inside or near any moving part while unit is running.

NEVER direct discharge towards persons or property that may be injured or damaged by thrown objects. DO NOT use on gravel surfaces. Stay alert for hidden hazards or traffic.

DO NOT throw snow any higher than necessary.

Deflected materials can cause injury and property damage.

ALWAYS stand clear of the discharge area when operating this unit.

Fumes from engine exhaust can cause injury or death. DO NOT run engine in an enclosed area. ALWAYS provide good ventilation.

ALWAYS disengage attachment, stop unit and engine, remove key and allow moving parts to stop before leaving operator's position.

Operation

Read, understand, and follow all instructions in the manual and on the machine before starting.

Understand:

- How to operate all controls
- The functions of all controls
- How to STOP in an Emergency

Rotating auger/impeller can cause serious injury. DO NOT unclog unit while engine is running. When leaving operator's position for *any reason*, ALWAYS disengage auger/impeller, stop unit and engine, remove key and allow moving parts to stop.

Before starting engine, disengage control(s).

Use only approved extension cords and receptacles when starting units equipped with electric starter.

ALWAYS allow unit and engine to adjust to outdoor temperatures before clearing snow.

ALWAYS be sure of your footing, especially when operating in reverse or leaving the operator's position. Walk, NEVER run during operation.

DO NOT operate at too fast a rate.

Slow down and turn corners slowly.

Do not operate in reverse unless absolutely necessary. ALWAYS back up slowly. ALWAYS look down and behind before and while backing.

Disengage clutch bail when traveling from one work area to another.

Abnormal Vibrations are a warning of trouble.

Striking a foreign object can damage unit.

Immediately stop unit and engine. Remove key and wait for all moving parts to stop.

Remove wire from spark plug. Inspect unit and make any necessary repairs before restart.

Before cleaning, removing clogs or making any inspections, repairs, etc.: disengage clutch(es), stop unit and engine, remove key, allow moving parts to stop. Allow hot parts to cool.

Run unit a few minutes after clearing snow to prevent freeze-up.

Disengage clutch bail when not in use. Before starting engine: disengage clutch bail. DO NOT use on gravel or crushed rock surfaces.

NEVER leave a running unit unattended.

ALWAYS shut off engine before leaving unit. ALWAYS remove key to prevent unauthorized use.

NEVER carry passengers.

Check clutch and brake operation frequently. Adjust and service as required. All motion of auger/impeller must stop quickly when bail is released.

Hazardous Slopes

DO NOT operate on steep slopes. DO NOT clear snow across the face of slopes. Keep all movement on slopes slow and gradual. DO NOT make sudden changes in speed or direction.

DO NOT park unit on a slope unless absolutely necessary. When parking on a slope ALWAYS block the wheels.

Transport

ALWAYS shut off engine, remove key and drain fuel when transporting unit on a truck or trailer.

Use extra care when loading or unloading unit onto trailer or truck.

Secure unit chassis to transport vehicle. NEVER secure from rods or linkages that could be damaged.

DO NOT transport machine while engine is running.

Cleaning

Keep unit free of ice or other debris. Clean up oil or fuel spills.

Spark Arrester

This product is equipped with an internal combustion type engine. DO NOT use unit on or near any unimproved, forest-covered or brush covered land unless exhaust system is equipped with a spark arrester meeting applicable local, state or federal laws. A spark arrester, if it is used, must be maintained in effective working order by operator.

FUEL SAFETY RULES

Fuel is highly flammable and its vapors are explosive. Handle with care. Use an approved fuel container.

NO smoking, NO sparks, NO flames. ALWAYS allow engine to cool before servicing.

NEVER fill fuel tank when engine is running or hot from operation.

NEVER fill or drain fuel tank indoors.

Replace fuel cap securely and clean up spilled fuel.

NEVER fill containers inside a vehicle or on a truck or trailer bed with a plastic liner.

ALWAYS place containers on the ground away from your vehicle before filling.

When practical, remove gas-powered equipment from the truck or trailer and refuel it on the ground. If this is not possible, then refuel such equipment on a trailer with a portable container, rather than from a gasoline dispenser nozzle.

Keep the nozzle in contact with the rim of the fuel tank or container opening at all times until fueling is complete. Do not use a nozzle lock-open device.

If fuel is spilled on clothing, change clothing immediately.

MAINTENANCE AND SERVICE SAFETY RULES

Before tipping unit up onto housing, remove fuel so no spills will occur. Ensure unit is secure and will not tip over during maintenance.

ALWAYS keep protective structures, guards, and panels in good repair, in place and securely fastened. NEVER modify or remove safety devices.

DO NOT change engine governor settings or over-speed engine.

Before cleaning, removing clogs or making any inspections, repairs, etc.: disengage clutch(es), stop unit and engine, remove key, allow moving parts to stop. Allow hot parts to cool.

Fumes from engine exhaust can cause injury or death. DO NOT run engine in an enclosed area. ALWAYS provide good ventilation.

ALWAYS maintain unit in safe operating condition. Damaged or worn out muffler can cause fire or explosion.

Keep all hardware properly tightened.

Maintain or replace safety and instruction labels, as necessary.

STORAGE SAFETY RULES

NEVER store unit with fuel in fuel tank, inside a building where any ignition sources are present.

Allow engine to cool completely before storing in closed area or covering unit.

For extended storage, clean unit thoroughly. See Engine Manual for proper storage.

ACCESSORY AND ATTACHMENT SAFETY RULES

Use only attachments or accessories designed for your unit.

Check components frequently. If worn or damaged, replace with manufacturer's recommended parts.

ASSEMBLY



WARNING: AVOID INJURY. Read and understand *Assembly* and *Fuel Safety Rules* before proceeding.

TOOLS REQUIRED

7/16" Open-end wrench

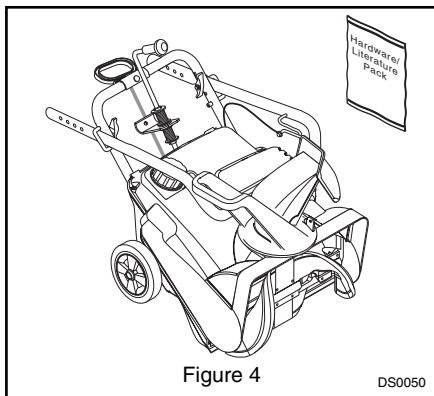
ASSEMBLY

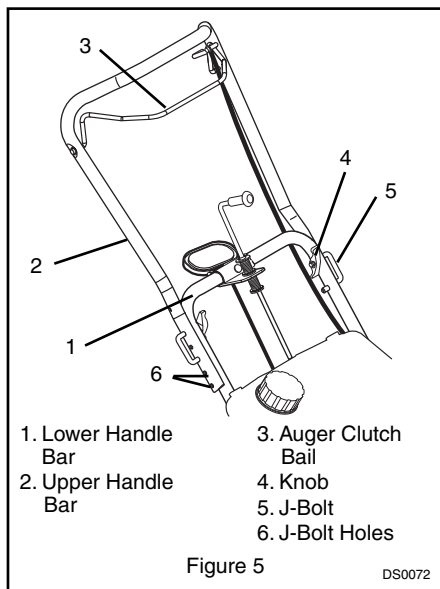
Handlebar Assembly

1. Remove retaining nuts and handlebar knobs and release J-bolts from lower handlebar (Figure 5).
2. Unfold upper handlebar.

NOTE: Adjust handlebar to a height comfortable for the operator. Refer to *Handlebars* in *Operation*.

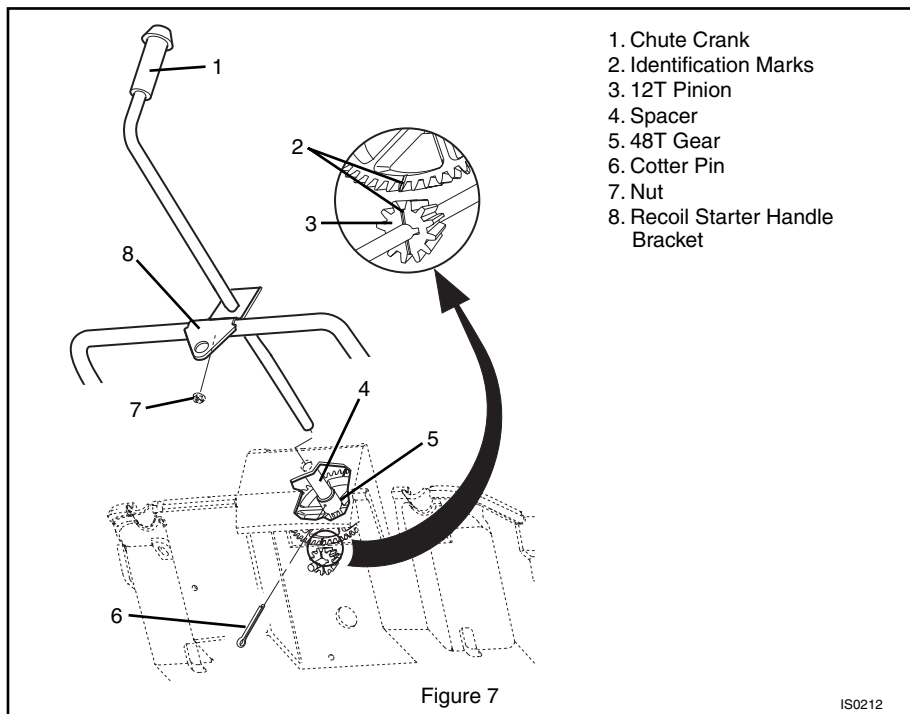
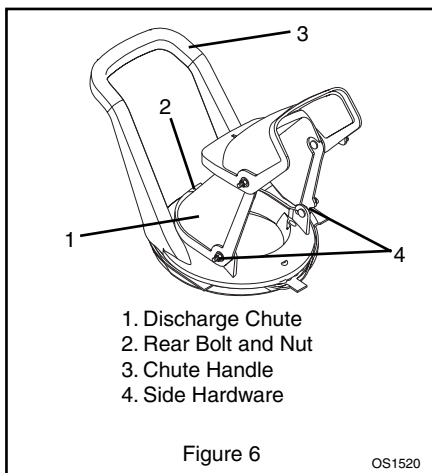
3. Put J-bolts through the upper handlebar and lower handlebar holes.
4. Replace retaining nuts and tighten handlebar knobs to secure upper handlebar.





Discharge Chute Assembly

1. Remove bolt and nut from rear of discharge chute (Figure 6).
2. Tip discharge chute up and install hardware just removed. Tighten hardware at rear of discharge chute first, then sides.



Discharge Chute Crank Assembly (938017, 018)

1. Remove nut from bolt that holds recoil starter handle bracket in place (Figure 7).
2. Pull the chute crank assembly up so hole in chute crank bracket fits behind/under lower handle bar and over bolt end.

NOTE: DO NOT pull chute crank bracket past the lower handle bar or the 48T gear and spacer will fall off into unit.

3. With crank knob straight up and discharge chute straight forward, check that 48T gear meshes with 12T pinion. Align space and tooth identification marks.
4. Insert cotter pin (taped to chute crank assembly) through 48T gear and chute crank shaft. Slight movement of the crank shaft or discharge chute may be needed to align holes.
5. Rotate chute crank to access cotter pin. Secure pin by bending ends over.

6. Secure chute crank and starter handle to lower handle bar by reinstalling nut from step 1.

CHECKLIST

Please complete the following checklist before proceeding:

- ☐ All assembly instructions have been completed.
- ☐ No remaining loose parts in carton.
- ☐ Handlebar is adjusted comfortably and tightened securely.

While learning how to use your unit, pay extra attention to the following important items:

- ☐ Fill fuel tank with proper gasoline/oil mix.
- ☐ Become familiar with all controls – their location and function.
- ☐ Be certain that all hardware is properly tightened.

OPERATION



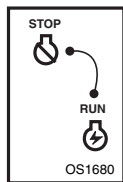
WARNING: AVOID INJURY. Read and understand *Operational Safety Rules* and *Fuel Safety Rules* before proceeding.

CONTROLS AND FEATURES

Refer to Figure 1 for controls and features locations.

Ignition Switch

The ignition switch is operated with a removable key that has two positions.



"STOP" Position: Ignition system is shut down.

"RUN" Position: All controls are operable.

To start the engine, the key must be in the "RUN" position.

To stop the engine, turn the key to the "STOP" position.

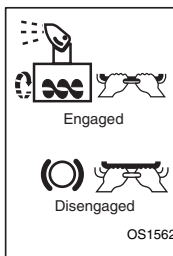
Auger

When handlebar is lifted so auger contacts the ground, auger propels unit forward while collecting snow. Forward speed will vary according to depth and moisture content.

Auger Clutch Bail



WARNING: IMPROPER ADJUSTMENT could result in death or serious injury. **AUGER BRAKE MUST DISENGAGE** when clutch is engaged. **BRAKE MUST STOP AUGER WITHIN 5 SECONDS** of releasing auger clutch bail.



Squeeze the auger clutch bail against the handlebar to engage auger.

Release bail to disengage and brake auger.

IMPORTANT: Check auger to be sure it is not frozen. If belt squeals when clutch bail is engaged, auger is frozen. Immediately release the clutch bail and move the unit to a heated area to thaw.

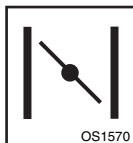
IMPORTANT: Check clutch/brake function before each use. If auger clutch bail moves freely with no resistance before contacting handlebar, adjust or repair unit before operating.

Primer Bulb



Push in the primer bulb to add fuel for easier engine start. See *Starting and Shut Off*.

Choke Control Knob



When pulled out (away from auger housing) the choke control knob chokes off air to the engine for easier start. When pushed in, control knob allows for normal operation.

IMPORTANT: When engine has started, open choke slowly by gradually pushing choke control in.

Recoil Starter Handle

When pulled, handle will crank engine.

IMPORTANT: DO NOT let handle snap back against unit.

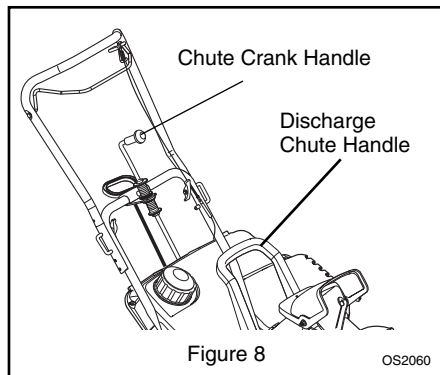
Discharge Chute

Discharge Chute rotates 220°. Rotate chute with discharge chute handle.

Chute Crank Handle (938017, 018)

Rotate the Chute with Discharge Chute Crank Handle (Figure 8).

IMPORTANT: DO NOT force frozen Chute controls. Start engine and run for 3-5 minutes to thaw. If still frozen, take to warm place until controls are free.



Discharge Chute Deflector

The discharge chute deflector controls how high snow is thrown.

Use handle at rear of deflector to position deflector at desired height.

Push down handle to increase height of discharge.

Pull up on handle to decrease height of discharge.

IMPORTANT: If chute deflector does not stay in set position, adjust as directed in *To Adjust Discharge Chute Deflector*, or repair before operation.

Handlebars

Adjust upper handlebar by selecting alternate holes for "J" Bolts.



CAUTION: Adjust auger control cable after changing handlebar height.

Tighten handlebar knobs to secure upper handlebar.

The upper handlebar can be folded for storage.

Scraper Blade

The scraper blade allows the back of the housing to keep better contact with the surface being cleared. It also prevents damage to the housing from normal wear.

IMPORTANT: DO NOT allow scraper blade to wear down too far or auger housing will become damaged.

Fuel Level Indicator

The fuel level indicator is an extension of the fuel tank that allows you to see the level of fuel in the tank without removing the fuel cap.

FILLING FUEL TANK



WARNING: AVOID INJURY. Read and understand *Fuel Safety Rules* in *Safety* section before proceeding.

Check fuel level by looking at fuel level indicator on rear of unit. Add fuel as required. To add fuel to fuel tank:

IMPORTANT: Two cycle engines require that oil be mixed with fuel. Failure to mix oil with fuel will result in seizure and severe damage to engine. DO NOT use gasohol or gasoline containing alcohol because alcohol will cause internal parts to deteriorate. See Engine Manual for correct type and grade of fuel.

1. ALWAYS place unit in open or well ventilated area.
2. Stop engine and allow to cool.
3. See engine manual for proper fuel/oil mixture.
4. Clean fuel cap and surrounding area to prevent dirt from entering fuel tank.
5. Remove cap.
6. Fill fuel tank with mixture. Tank capacity is 1.2 quarts (1.1 liters).
7. Replace fuel cap and tighten.

NOTE: Fuel mixture left standing for prolonged periods will begin to separate; thoroughly shake mixture before use.

STOPPING IN AN EMERGENCY

Immediately release auger clutch bail to stop unit movement.

Stop engine, remove key and wait for all rotating parts to stop before leaving operator's position.

BEFORE STARTING ENGINE

1. Check for Frozen Auger

- With key in "STOP" position, squeeze auger clutch bail to Engaged position and pull recoil starter handle.
- If you cannot pull starter handle, auger is frozen. Move unit to a heated area to thaw to prevent possible damage.

2. Check Clutch Function



WARNING: FAILURE OF CLUTCHES OR BRAKES may result in death or serious injury. Check clutch and brake function before each use. Repair or adjust before operation.

1. With key in "STOP" position, squeeze auger clutch bail to Engaged position.
2. Pull recoil starter handle. Auger should rotate with the turning of the engine.
3. Release the auger clutch bail.
4. Pull recoil starter handle again. Auger must not rotate as engine turns.

If the auger clutch bail moves freely with no resistance before contacting handlebar, adjust or repair before operation(see *To Adjust Auger Control Cable*).

3. Check Engine Fuel Level



WARNING: AVOID INJURY. Read and understand *Fuel Safety Rules* in *Safety* section before proceeding.

Add fuel if required. Refer to *Filling Fuel Tank*.

STARTING AND SHUTOFF



WARNING: FAILURE TO FOLLOW INSTRUCTIONS could result in personal injury and/or damage to unit. DO NOT attempt to start your unit at this time. Read entire Owner/Operator Manual and the Engine Manual first.

IMPORTANT: At start up, allow unit and engine to adjust to the outdoor temperatures before clearing snow. Before shut off, run auger a few minutes to prevent freeze-up of auger.

NOTE: Try out each control without the engine running to see how it works and what it does.



WARNING: THROWN OBJECTS could cause death or serious injury. ALWAYS position discharge chute straight ahead (away from operator) for starting.

Manual Start

1. Turn discharge chute straight ahead.
2. Push primer bulb 1 to 3 times for cold engine.

NOTE: When temperature is below -15° F (-26° C) additional priming may be needed.

3. Pull choke control knob out.

NOTE: A warm engine requires less choking than a cold engine.

4. Insert key into ignition switch.
5. Turn key to "RUN" position.
6. Stand to right of unit. Grasp starter handle and pull rope out slowly until it pulls harder, this is compression stroke, let rope rewind slowly.
7. Pull rope with a rapid continuous full arm stroke. Let rope rewind slowly.

IMPORTANT: DO NOT let starter handle snap against unit.

8. Repeat until engine starts. (If engine does not start, refer to *Troubleshooting*.)

9. When engine has started, open choke slowly by gradually pushing choke control knob in.

Electric Start (938017, 938018)

IMPORTANT: DO NOT crank engine for more than 20 seconds. ALWAYS allow starter to cool down for 10 minutes between each try or starter will be damaged.

1. Turn discharge chute straight ahead.
2. Push primer Bulb 1 to 3 times for cold engine.

NOTE: When temperature is below -15° F (-26° C) additional priming may be needed.

3. Pull choke control knob out.

NOTE: A warm engine requires less choking than a cold engine.

4. Insert key into ignition switch.
5. Turn key to "RUN" position.
6. Connect Female End of power cord to switch Box.
7. Plug Male End of power cord into 120 Volt AC receptacle.
8. Push starter button to crank engine.
9. When engine starts, release starter button.
10. Open choke slowly by gradually pushing choke control knob in.
11. Disconnect power cord from receptacle first, then from switch box.

NOTE: Electric start models can be started manually. See *Manual Start* above.

Shutoff

1. Engage and run auger a few minutes after use to prevent freeze-up of auger.
2. Release auger clutch bail and allow auger to stop.
3. Turn ignition switch to "STOP" position.
4. Remove key.

TO THROW SNOW

IMPORTANT: Allow unit and engine to adjust to the outdoor temperature before clearing snow.

To propel unit and throw snow:

1. Start engine.
2. Squeeze auger clutch bail against handlebar to engage auger.
3. Lift handlebar so auger contacts surface to be cleared. Lift the handlebar only high enough to propel unit forward.

NOTE: Do not lift so high to allow snow to kick back from under unit.

Tips for Operation

Snow is best removed as soon as possible after a snow fall.

To clear an area, run unit in an overlapping series of paths. For large areas, start in the middle and throw snow to each side, so snow is not cleared more than once.

ALWAYS direct snow away from area to be cleared and with direction of the wind.

IMPORTANT: DO NOT overload unit capacity by attempting to clear snow at too fast a rate.

TO TRAVEL TO ANOTHER WORK AREA

1. Release auger clutch bail to disengage auger.
2. Press down on handlebar enough to raise front of unit slightly off the ground and push or pull unit.

TO TRANSPORT UNIT

- ALWAYS shut off engine and drain fuel when transporting unit on a truck or trailer.
- Use extra care when loading or unloading unit onto trailer or truck.
- Secure unit chassis to transport vehicle. NEVER secure by rods or linkages that could be damaged.
- Always shutoff engine for transport.

MAINTENANCE



WARNING: AVOID INJURY. Read and understand *Maintenance and Service Safety Rules* in *Safety* section before attempting any maintenance.

GENERAL RECOMMENDATIONS

Some adjustments must be made periodically to properly maintain your unit. All adjustments in the *Service and Adjustments* section of this manual should be checked at least once each season.

MAINTENANCE SCHEDULE

The chart below shows the recommended maintenance schedule that should be performed on a regular basis. More frequent service may be required due to heavy loads or use. See Engine Manual for further maintenance and troubleshooting information.

MAINTENANCE SCHEDULE				
Service Performed	Before Each Use	After Each Use	Every 10 Hours	Every Season
Check Clutch Function	•			
Clean Unit		•		
Check Fasteners			•	
Clean Engine Cooling System				•

CHECK CLUTCH FUNCTION



WARNING: FAILURE OF CLUTCHES OR BRAKES may result in death or serious injury. Check clutch and brake function before each use. Repair or adjust before operation.

1. With key in "STOP" position, squeeze auger clutch bail to Engaged position.
2. Pull recoil starter handle. Auger should rotate with the turning of the engine.
3. Release the auger clutch bail.
4. Pull recoil starter handle again. Auger must not rotate as engine turns.

If the auger clutch bail moves freely with no resistance before contacting handlebar, adjust or repair before operation.

NOTE: The unit will require auger control cable and/or idler adjustment after 20 hours of operation on a new unit or new drive belt. See *To Adjust Auger Control Cable* for instructions.

CLEAN UNIT

After each use, brush snow and debris off with a soft bristled brush. Occasionally apply a light coat of spray lubricant to exposed metal joints and surfaces. Wipe off excess with soft cloth. Do not use abrasives or harsh cleaners.

Take steps to prevent rust and corrosion. Never spray unit with high pressure water or store unit outdoors.

CHECK FASTENERS

Keep all nuts, bolts, and screws properly tightened.

CLEAN ENGINE COOLING SYSTEM

Engine is air cooled. Air must circulate freely around engine to prevent overheating.

Clean external surfaces of engine of dust, dirt and oil deposits which can contribute to improper cooling.

Refer to Engine Manual.

IMPORTANT: DO NOT operate engine with cooling shrouds removed. Engine overheating and damage will result.

SERVICE AND ADJUSTMENTS



WARNING: AVOID INJURY. Read and understand *Maintenance and Service Safety Rules* in *Safety* section before attempting service or adjustments.

SERVICE POSITION

Place unit on a flat level surface.

HANDLEBARS

Adjust upper handlebar by selecting alternate holes for "J" Bolts.



CAUTION: Adjust auger control cable after changing handlebar height.

Tighten handlebar knobs to secure upper handlebar.

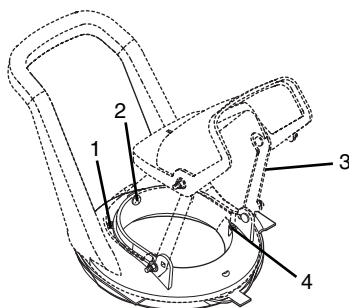
The upper handlebar can be folded for storage.

TO ADJUST DISCHARGE CHUTE

If discharge chute rotates while throwing snow, torque the four screws holding it to the housing to 11-12 lbf-in (1.23-1.35 N•m). See Figure 9.

IMPORTANT: Overtightening screws will strip the screw holes.

1. Remove nut and bolt from rear of discharge chute.
2. Tip discharge chute forward.
3. Tighten two rear screws.
4. Tighten two front screws.
5. Reposition discharge chute and fasten with nut and bolt.



1. Rear Screw
2. Rear Nut and Bolt
3. Discharge Chute
4. Front Screw

Figure 9

TO ADJUST DISCHARGE CHUTE DEFLECTOR

If discharge chute deflector does not stay in set position during operation, adjust chute by tightening fasteners evenly until deflector stays in position (Figure 10).

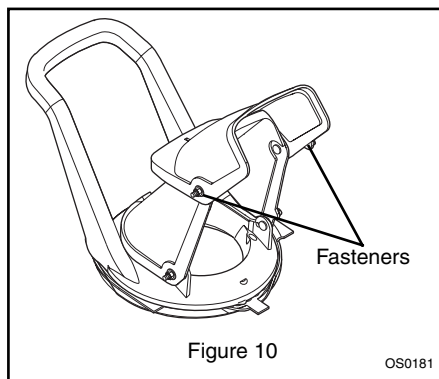


Figure 10

OS0181

NOTE: Use a T30 Torx Drive or a 3/16" (5 mm) wide Straight Screwdriver to tighten.

TO REPLACE THE DRIVE BELT

1. Remove fuel cap.
2. Remove cowl and replace fuel cap.
3. Disconnect extension spring on idler arm/ brake (Figure 11).
4. Remove cap screw and washer from end of auger shaft and pull off auger drive pulley.

5. Remove old belt.
6. Install new belt onto pulleys.
7. Reinstall auger drive pulley and secure with washer and cap screw.
8. Reconnect extension spring to idler arm/brake.
9. Ensure belt finger and auger clutch control cable are properly adjusted. See *To Adjust Belt Finger* and *To Adjust Auger Control Cable*.
10. Remove fuel cap and replace cowl.
11. Replace fuel cap.

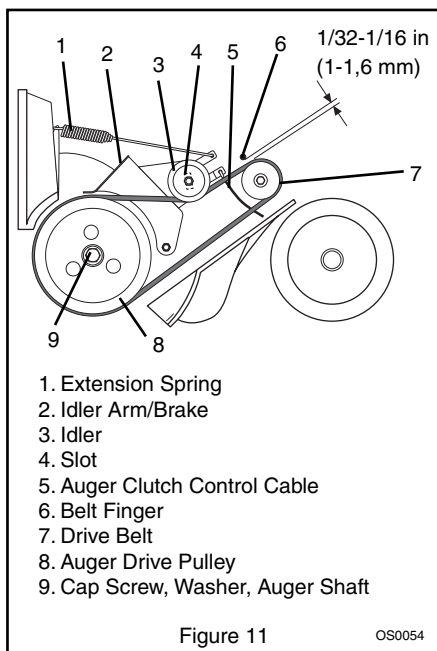


Figure 11

OS0054

TO ADJUST BELT FINGER

With the auger clutch engaged, there should be 1/32 to 1/16 in (1-1.6 mm) clearance between the belt finger and drive belt.

To adjust:

1. Loosen bolt holding the belt finger.
2. Rotate the belt finger around the bolt to the correct position.
3. Tighten bolt.

TO ADJUST AUGER CONTROL CABLE



WARNING: IMPROPER ADJUSTMENT could result in death or serious injury. **AUGER BRAKE MUST DISENGAGE** when clutch is engaged. **BRAKE MUST STOP AUGER WITHIN 5 SECONDS** of releasing auger clutch bail.

There must ALWAYS be some slight noticeable slack in the auger control cable when the auger is disengaged. This allows extension spring to pull idler arm/brake, which applies the brake to the belt.

The auger clutch bail should travel 6-3/4 to 7-1/4 in (17.1-18.4 cm) before contacting handlebar.

A properly adjusted clutch must extend control cable spring approximately 1/4 in to 3/8 in (6-10 mm) before clutch bail contacts handlebar (Figure 12).

1. Shut off engine.
2. Loosen locknut on threaded section of control cable adjusting feature.
3. Turn solid section to provide some slight, noticeable slack in cable.
4. Hold the solid section with a pliers and gently, with a small wrench, tighten the locknut.

IMPORTANT: If there is still no resistance, the idler position must be adjusted. See *To Adjust Idler Position*.

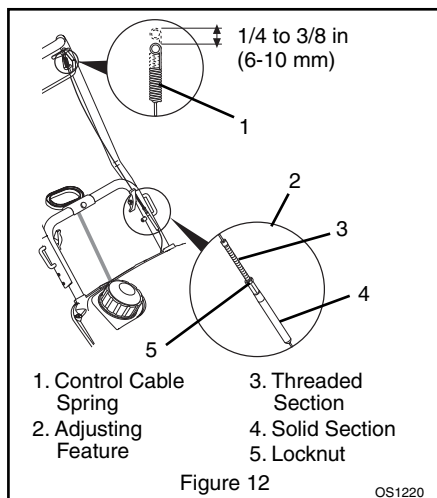


Figure 12

OS1220

TO ADJUST IDLER POSITION

The idler must be as close as possible to the drive belt when the auger clutch is disengaged, but not so close that it causes auger rotation.



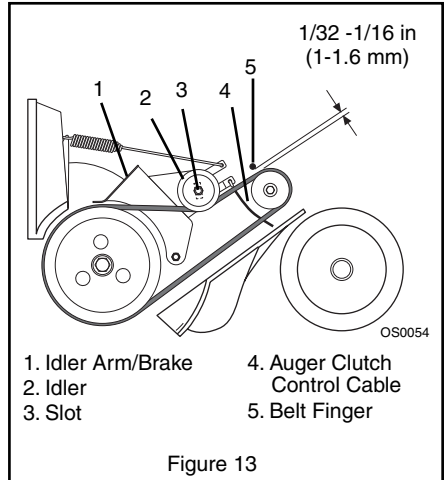
WARNING: ROTATING PARTS can cut off body parts. Keep hands and feet away. Loose clothing, long hair or scarves can get caught in rotating parts and cause death or serious injury.

To adjust the idler position:

IMPORTANT: If adjustment cannot be achieved, the drive belt must be replaced.

1. Shut off engine, allow to cool, and remove cowl.
2. Ensure control cable has some slight, noticeable slack when auger clutch is disengaged (bail in lowered position).
3. Ensure belt finger is properly adjusted. See *To Adjust Belt Finger*.
4. Loosen idler hardware, reposition idler along slot in idler arm, and tighten hardware (Figure 13).

5. Check for proper extension of control cable spring. See *To Adjust Auger Control Cable*.
6. Start engine and ensure auger does not rotate when auger clutch is disengaged.
7. Shut off engine.
8. Repeat the above steps until proper adjustment is achieved.
9. Replace cowl.



STORAGE



WARNING: AVOID INJURY> Read and understand *Storage Safety Rules* in *Safety* section before proceeding.

SHORT TERM

IMPORTANT: NEVER spray unit with high pressure water or store unit outdoors.

Run with attachment clutch engaged a few minutes after each use to free unit of any loose or melting snow.

Inspect unit for visible signs of wear, breakage or damage.

Keep all nuts, bolts and screws properly tightened and know unit is in safe working condition.

Store unit in a cool, dry protected area.

LONG TERM

Clean unit thoroughly with mild soap and low pressure water and lubricate (see *Maintenance*). Touch up all scratched painted surfaces.

Remove weight from wheels by putting blocks under frame or axle.

When storing unit for extended periods of time, remove all fuel from tank and carburetor (run dry). Refer to Engine Manual.

TROUBLESHOOTING

PROBLEM	PROBABLE CAUSE	CORRECTION
Engine will not crank	<ol style="list-style-type: none"> 1. Ignition switch not in "RUN" position. 2. Bad starter or wire connection. 3. Electrical problem 	<ol style="list-style-type: none"> 1. Turn key to "RUN" position. 2. Check connections. See your Dealer. 3. Check wiring for wear, damage or poor connections. See your Dealer.
Engine will not start	<ol style="list-style-type: none"> 1. Ignition switch not in "RUN" position. 2. Bad starter or wire connection. 3. Engine ignition problem. 4. Fuel tank is empty. 5. Clogged fuel filter. 	<ol style="list-style-type: none"> 1. Turn key to "RUN" position. 2. Check connections. See your Dealer. 3. See Engine Manual. 4. Fill tank with properly mixed fuel. Prime engine, set choke for easier start. 5. Replace fuel filter.
Engine stops	<ol style="list-style-type: none"> 1. Improperly mixed or contaminated fuel. 2. No spark. 3. Clogged fuel filter. 	<ol style="list-style-type: none"> 1. Use only clean, properly mixed fuel. If necessary, drain tank and refill with new fuel mixture. 2. Check spark plug and connecting wire. 3. Replace fuel filter.
Discharge chute will not turn	<ol style="list-style-type: none"> 1. Chute gears are frozen. 	<ol style="list-style-type: none"> 1. Move unit to a warm area to thaw.
Auger will not turn or throw snow	<ol style="list-style-type: none"> 1. Auger is frozen in place. 2. Ice or debris is obstructing auger. 3. Auger control cable out of adjustment. 4. Drive belt slipping; idler out of adjustment. 	<ol style="list-style-type: none"> 1. Move unit to a warm area to thaw. 2. With engine off, and auger disengaged, check for obstructions and remove. 3. Adjust cable. See <i>To Adjust Auger Control Cable</i>. 4. Adjust idler. See <i>To Adjust Idler Position</i>.

ACCESSORIES

See your authorized Ariens Dealer to add these optional accessories.

73800300	Discharge Chute Crank Kit (938019)
73800100	Electric Starter Kit (938019)

SERVICE PARTS

Be sure to always use genuine Ariens parts to keep your unit running like new.

Part no.	Qty	Description
07236300	1	Drive Belt
03810600	1	Scraper Blade
02910800	1	Fuel Filter

SPECIFICATIONS

Model Number	938018	938017	938019
Description	722	522	
Engine - Tecumseh	HSK870-8701B	HSK-850-8310B	
Engine Power - HP (kW) - 2 Cycle	7 (5.22)	5 (3.73)	
Engine Operating Fast Idle Speed - RPM	3950 ± 150	3600 ± 150	
Engine Displacement - cu. in. (cc)	8.46 (139)		
Fuel	See Engine Manual for type and grade		
Fuel to Oil Mix	50:1		
Fuel Tank Capacity - qt (Liters)	1.2 (1.1)		
Fuel Filter Neck Inside Dia. - in. (cm)	2.8 (7.1)		
Electric Start	120V		Optional
Snow Clearing Width - in. (cm)	22 (56)		
Snow Throwing Distance - ft (meters)	3-35 (0.9-10.6)		
Chute Rotation Angle	220°		
Chute Inside Dia - in. (cm)	6.0 (15.2)		
Handlebars Max. Extended Height - in. (cm)	40.8 (104)		
Minimum Folded Height - in. (cm)	25.8 (65.5)		
Length - in (cm)	43.2 (110)		
Minimum Folded Length - in. (cm)	34.5 (87.6)		
Width - in. (cm)	22 (56)		
Weight - lbs (Kg)	80 (36.3)		75 (34)
Auger Dia. - in. (cm)	9.0 (23)		
Auger Speed - RPM	1430	1310	
Drive Belt	3L Section, Single “V” Construction, Raw Edge Kevlar Cord		
Wheel Size - in. (cm)	7.0 x 1.5 (18 x 3.8)		



Ariens Company
655 West Ryan Street
P.O. Box 157
Brillion, WI 54110-0157
920-756-2141
Fax 920-756-2407
www.ariens.com

3 Year Limited Sno-Thro Warranty

Ariens Company warrants to the original purchaser that consumer products manufactured by Ariens Company will be free from defects in material and workmanship for a period of three (3) years after the date of purchase, and will repair any defect in material or workmanship, and repair or replace any defective part, subject to the conditions, limitations and exclusions set forth herein.

The three year duration of this warranty applies only if the product is put to ordinary, reasonable, and usual personal, family, or household uses. If the product is put to any business, commercial, or industrial use, then the duration of this warranty is ninety (90) days after the date of purchase, or one (1) year after the date of purchase if the product is labeled as a Professional/Commercial Product. If any product is rented or leased, then the duration of this warranty is ninety (90) days after the date of purchase.

Genuine Ariens service parts and accessories not purchased with the product covered by this warranty, but which are later purchased and used with that product, are warranted to be free from defects in material and workmanship for a period of ninety (90) days after date of purchase, and Ariens Company will repair or replace any such part or accessory free of charge, except for labor, during that period.

This warranty is subject to the following conditions, limitations, and exclusions:

This warranty is valid only if the following conditions are met:

- The warranty registration card must be completed and returned to Ariens Company.
- The purchaser must perform maintenance and minor adjustments explained in the owner's manual.
- The purchaser must promptly notify Ariens Company or an authorized Ariens service representative of the need for warranty service.

The following items are not covered by this warranty:

- Engines and engine accessories are covered only by the warranty made by the engine manufacturer, and are not covered by this warranty.
- Parts that are not genuine Ariens service parts are not covered by this warranty.
- Shoes, runners, scraper blades, shear bolts, headlights, light bulbs, are not covered by this warranty.
- Any defect which is the result of misuse, alteration, improper assembly, improper adjustment, neglect, or accident, is not covered by this warranty.
- Products which were not purchased in the United States, Puerto Rico, or Canada are not covered by this warranty. In all other countries, contact place of purchase.

This warranty is subject to the following limitations:

- The purchaser must transport the product to and from the place of warranty service.
- Warranty service must be performed by an authorized Ariens service representative. (To find an authorized Ariens service representative, contact Ariens Company at the number or address above.)
- Batteries are warranted only for a period of twelve (12) months after date of purchase, on a prorated basis. For the first ninety (90) days of the warranty period, a defective battery will be replaced free of charge. If the applicable warranty period is more than 90 days, Ariens Company will cover the prorated cost of any defective battery, for up to twelve (12) months after the date of purchase.
- Normal maintenance items including, but not limited to, belts, idlers, cables, friction wheels, tires, wheels, electrical components are warranted for a two year period from the date of purchase unless a shorter period would apply based on how the product is used, then the shorter period will apply.

DISCLAIMER OF FURTHER WARRANTY

Ariens Company makes no warranty, express or implied, other than what is expressly made in this warranty. If the law of your state provides that an implied warranty of merchantability, or an implied warranty of fitness for particular purpose, or any other implied warranty, applies to Ariens Company, then any such implied warranty is limited to the duration of this warranty. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

LIMITATION OF REMEDY AND DAMAGES

Ariens Company's liability under this warranty, and under any implied warranty that may exist, is limited to repair of any defect in workmanship, and repair or replacement of any defective part. Ariens Company shall not be liable for incidental, special, or consequential damages (including lost profits). Some states do not allow the exclusion of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Form: ALW3-042301



Ariens Company
655 West Ryan Street
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Brillion, WI 54110-0157
920-756-2141
Fax 920-756-2407

DURA-CLEAN™ Auger Limited Lifetime Warranty

Ariens Company hereby warrants to the original purchaser that the rubber components of the DURA-CLEAN™ Auger manufactured by Ariens Company will be free from defects in material and workmanship and will not wear out for the life of the sno-thro, except as noted below.

Protection Plan

Ariens Company will provide for the replacement of any of the rubber components of the DURA-CLEAN™ Auger found upon examination by the Ariens Company to be defective or worn out. Replacements will be supplied free of charge. Labor is not included after two (2) years from the date of purchase of the sno-thro.

This warranty is subject to the following exceptions, conditions, and limitations:

Usage Requirement

The lifetime limited warranty shall apply if the product is put to ordinary, reasonable, and usual personal household use. If the product is put to any business, commercial, industrial, rental, or leased use, the warranty shall be against defects in material and workmanship for ninety (90) days following the date of purchase.

Exclusions (No Warranty)

There will be no warranty coverage if the product has been altered, misused, mis-assembled, improperly adjusted, neglected, damaged by accident, or if service is completed by someone other than an authorized Ariens dealer.

This warranty applies only to products purchased in the United States (including Puerto Rico) and Canada. In all other countries, contact place of purchase.

Ariens Company may from time to time change the design of its products. Nothing contained in this warranty shall be construed as obligating Ariens Company to incorporate such design changes into previously manufactured products, nor shall such changes be construed as an admission that previous designs were defective.

LIMITATION OF REMEDY AND DAMAGES

Ariens Company's liability under this express warranty, and under any implied warranty that may exist, is limited to repair or replacement of any defective part. In no event shall Ariens Company be liable for incidental, special, or consequential damages (including lost profits). This warranty gives you specific legal rights. You may also have other rights which vary from state to state. Some states do not allow the exclusion of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above limitations and exclusions may not apply to you.

DISCLAIMER OF FURTHER WARRANTY

Ariens Company makes no warranty other than what is expressly made in this warranty. If the law of your state provides that an implied warranty of merchantability, or an implied warranty of fitness for a particular purpose, applies to Ariens Company, any such implied warranty is limited to the duration of this express warranty.

Form: DC-042400



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